

REMARKS

By the present amendment, Claims 1, 2, 4, 9, 10, 11, 12, 13, 26, 27 and 28 have been amended. New Claims 29-30 have been added. Claims 14-24 were previously canceled. No new matter has been entered.

Claims 1-13 and 25-30 are thus pending after entry of this Amendment, and favorable consideration thereof is respectfully requested. Claims 1 and 9 are the independent claims.

Claims 1-13 and 25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Opoku (US Patent No. 3,998,702).

The Examiner does not appear to have rejected claims 26-28.

35 U.S.C. §103(a)

The Examiner has rejected claims 1-13 and 25 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 3,998,702 to Opoku.

Applicant respectfully submits that Opoku fails to satisfy the requirements for a finding of obviousness of independent claims 1 and 9. Applicant's submissions in this respect have been prepared in light of the recently published "Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*" (Federal Register, Vol. 72, No. 195, Oct. 10, 2007, pp. 57526 – 57535) (the "Guidelines").

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 at 17-18 (1966), the Supreme Court set out the following objective framework for applying the statutory language of §103:

Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

Accordingly, the Guidelines confirm that obviousness is a question of law based on underlying factual inquiries. The factual inquiries set forth by the Court in *Graham* include:

- (1) Determining the scope and content of the prior art;

- (2) Ascertaining the differences between the claimed invention and the prior art; and
- (3) Resolving the level of ordinary skill in the pertinent art.

Claim 1

Claim 1, as amended, recites:

1. Apparatus for heating a bitumen froth by steam, the apparatus comprising:
a heater body comprising a bitumen froth inlet for receiving bitumen froth, a steam inlet for receiving steam, and a mixture outlet; and
a static mixer body having first and second spaced ends and forming an enclosed passageway extending between the first and second ends, wherein the first end is in communication with the mixture outlet, the static mixer body supporting a plurality of baffles disposed to effect a mixing action of material flowing through the enclosed passageway thereof;
wherein the steam inlet is disposed to inject the steam into the heater body towards the enclosed passageway in a direction generally parallel to the longitudinal axis of the enclosed passageway; and
wherein the apparatus is operably configured to direct substantially all of the bitumen froth and steam through the mixture outlet, into the enclosed passageway and out the second end of the static mixer body, including when the enclosed passageway is disposed parallel or about parallel to the horizontal axis.

Applicant respectfully submits that Opoku fails to disclose or suggest a number of features of claim 1. For example, Opoku's approach to deaerating bituminous froth relies on gravity to induce the flow of the bituminous froth. As stated by Opoku, this is necessary "to facilitate gravity flow of bituminous froth through the conduit" (sol. 3 lines 53-54). In fact, Opoku requires that his conduit 14' is "always" disposed at an angle from the horizontal in the range of 5 to 45 degrees (see Abstract; column 2 lines 43-46; column 3 lines 48-54; column 3 lines 66 to column 4 line 2; column 5 lines 12-16 and 20-28) in order to achieve "free gravity flow of bitumen froth" through the conduit.

By contrast, Applicant's apparatus of claim 1 uses pressurized steam to urge the bituminous froth and the steam itself through the enclosed passageway of the static mixer body. Furthermore, Applicant's apparatus is operably configured to direct the bitumen froth and the

steam through the enclosed passageway and out the second end of the static mixer body even when the enclosed passageway is disposed parallel or about parallel to the horizontal axis (e.g. see Fig. 1 and 2). Opoku expressly teaches away from Applicant's apparatus as defined in claim 1, requiring instead that his conduit 14' is always disposed at an angle from the horizontal in the range of 5 to 45 degrees. Opoku expressly requires that his conduit always be disposed at such an angle specifically because he is dependent upon gravity to facilitate material flow. If Opoku's conduit were disposed at less than 5 degrees or more than 45 degrees, by Opoku's own teachings it is apparent that his gravity-dependent device would not work (see column 3 lines 48-68; column 4 lines 1-2). As Applicant's apparatus uses pressurized steam within an enclosed passageway to direct the bitumen froth and steam through the enclosed passageway and out the second end, Applicant's apparatus is not encumbered by the angular conduit restrictions required by Opoku's gravity-dependent approach, and can operate properly even when the enclosed passageway is disposed parallel or about parallel to the horizontal axis, as illustrated in Fig. 1 and 2 of Applicant's application. On the basis of these differences alone, Applicant's claim 1 is not obvious in view of Opoku.

In addition, Applicant's apparatus of claim 1 has a steam inlet disposed to inject the steam into the heater body towards the enclosed passageway of the static mixer body and in a direction generally parallel to the longitudinal axis of the enclosed passageway (e.g. see Fig. 1 and 2). Applicant respectfully submits that Opoku does not disclose or suggest such an apparatus. This is understandable since Opoku is concerned with the use of an angled conduit to facilitate free gravity flow, not an apparatus such as in claim 1, which uses pressurized steam to direct the bitumen froth through an enclosed passageway.

In light of the above very significant differences, Applicant respectfully submits that the second of the three *Graham* factual inquiries strongly supports a finding of non-obviousness of independent claim 1. In addition, as Opoku expressly teaches away from the apparatus defined in claim 1, Applicant respectfully submits that it would be improper to assert that Opoku renders claim 1 obvious. Accordingly, Applicant respectfully submits that the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) should be withdrawn.

Claims 2-8 and 25

Claims 2-8 and 25 depend directly or indirectly from independent claim 1. Accordingly, Applicant respectfully submits that these claims are not obvious in view of the cited reference due to their dependencies, and due to the additional subject matter that these claims recite. Accordingly, Applicant respectfully submits that the Examiner's rejection of claims 2-8 and 25 under 35 U.S.C. § 103(a) should be withdrawn.

In the event the Examiner meant also to reject claims 26 and 27 as well, Applicant's submissions immediately above also apply to claims 26 and 27.

Claim 9

Claim 9, as amended, recites:

9. Apparatus for heating a bitumen froth by steam, the apparatus comprising:
 - a heater body comprising a bitumen froth inlet for receiving bitumen froth, a steam inlet for receiving steam, and a mixture outlet;
 - a steam pressure flow control valve to control a pressure of steam supplied to the steam inlet from a steam source;
 - a condensate mixer operably configured to mix a condensate with the steam from the steam source;
 - a condensate flow control valve to control a supply of the condensate to the condensate mixer;
 - a static mixer body having first and second spaced ends and forming an enclosed passageway extending between the first and second ends, wherein the first end is in communication with the mixture outlet, the static mixer body supporting a plurality of baffles disposed to effect a mixing action of material flowing through the static mixer;
 - a temperature transmitter disposed to measure at least one of (a) a temperature of material flowing through the enclosed passageway, and (b) a temperature of material flowing out the second end of the enclosed passageway; and
 - a steam flow control valve to control a rate of steam supply to the steam inlet from the steam source in response to the temperature of the bitumen froth and steam measured by the temperature transmitter;

wherein the steam inlet is disposed to inject the steam into the heater body towards the enclosed passageway in a direction generally parallel to the longitudinal axis of the enclosed passageway; and

wherein the apparatus is operably configured to direct substantially all of the bitumen froth and steam through the mixture outlet, into the enclosed passageway and out the second end of the static mixer body, including when the enclosed passageway is disposed parallel or about parallel to the horizontal axis.

Independent claim 9 as amended includes features similar to those recited in independent claim 1 and argued earlier in these submissions with respect to claim 1. Accordingly, for reasons similar to those given in respect of claim 1, Applicant respectfully submits that claim 9 is not obvious in view of the cited reference, and therefore the Examiner's rejection of claim 9 under 35 U.S.C. § 103(a) should be withdrawn.

Claims 10-13

Claims 10-13 depend directly from independent claim 9. Accordingly, Applicant respectfully submits that these claims are not obvious in view of the cited reference due to their dependencies, and due to the additional subject matter that these claims recite. Therefore, Applicant respectfully submits that the Examiner's rejection of claims 10-13 under 35 U.S.C. § 103(a) should be withdrawn.

In the event the Examiner meant also to reject claim 28 as well, Applicant's submissions immediately above also apply to claim 28.

New Claims

New claim 29 depends directly from independent claim 1, and new claim 30 depends directly from independent claim 9. These new claims contain an element previously included in claim 1 and 9, but which has been relocated to the new dependent claims. Accordingly, Applicant respectfully submits that new claims 29-30 are not obvious in view of the cited reference due to their dependencies, and due to the additional subject matter that these claims recite.

Other Amendments

Claims 2, 4, 10 and 11 have undergone minor amendments to clarify that the passageway of the static mixer body is an enclosed passageway. Claims 12 and 13 have undergone minor

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amendments for readability. Claims 26-28 have undergone minor amendments to further specify the subject matter recited in those claims.

No Disclaimers or Disavowals


Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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